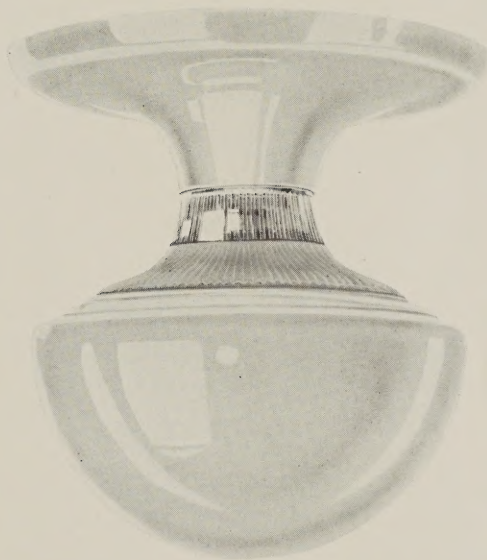


The "Scientific" Unit



Gill-Virden Company
Philadelphia, Pa., U.S.A.

The **"Scientific" Unit**



GILL-VIRDEN COMPANY, INC.
AMBER AND VENANGO STS., PHILADELPHIA, U.S.A.



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The "Scientific" Unit

THE gradual utilization and the practical application of known scientific principles to every problem of transportation, inter-communication, construction and illumination provide a startling and amazing panorama of progress.

It is, however, in the practical and efficient utilization of electricity for illumination that we are intimately and immediately concerned. In this particular phase of scientific research and investigation, progress has been as startling and amazing as in any other, and we now offer to the trade the "SCIENTIFIC" unit as the most advanced method of illumination yet developed.

The "SCIENTIFIC" unit is vastly superior to any other unit now manufactured, as it is built to meet the most modern conception of correct illumination. The "SCIENTIFIC" unit is composed of three separate and distinct parts, but merged into one efficient and attractive unit. Its primary object is to provide a maximum of illumination, both direct and indirect. The "SCIENTIFIC" unit consists of a canopy of Hyperion glass, a Crystal Reflector and a Diffusing Bowl, also of Hyperion glass. The light is projected directly on the working plane by the bottom diffusing bowl and indirectly by the crystal reflector which projects the light on the white glass canopy which, in turn, directs it to useful planes.

The "SCIENTIFIC" unit successfully controls light and gives a greater light output than any other unit, as the reflector is made of Crystal glass and naturally, absorbs a negligible percentage of light and thus, the total light output of the unit, as a whole, is considerably more than that of any style heretofore on the market.

The efficiency of the ceiling type is such as to render the pendant type unnecessary in most installations, as the combination of crystal reflector with white diffusing glass canopy gives a wide range of distribution and will project more light on the working plane than any other unit in the pendant type. The "SCIENTIFIC" unit can, of course, be furnished in the pendant type, but in such case the unit will consist of the bowl and the reflector only, without the glass canopy.

In every science, advance in theoretical knowledge is followed by its practical application, and the development of the "SCIENTIFIC" unit is the logical sequence of the latest acceptance of what constitutes correct illumination. A physical examination, only, will disclose the reason for its superiority, and this conclusion will be confirmed by its performance in operation. The "SCIENTIFIC" unit is protected by basic as well as design patents.

GILL-VIRDEN COMPANY, INC.

Method of Installation

Installing a Scientific Unit is so extremely simple that it requires only about ten minutes for the entire operation and while the method will be obvious and without complication to any competent electrician the accompanying sketch and detailed instructions are furnished so that a helper or layman will experience no difficulty in making the installation.

"A"—Make regular connection of "pigtail receptacle No. 1" to lead wires.

"B"—Attach "crossbar and supporting rods No. 2" to fixture stud or ears of outlet box.

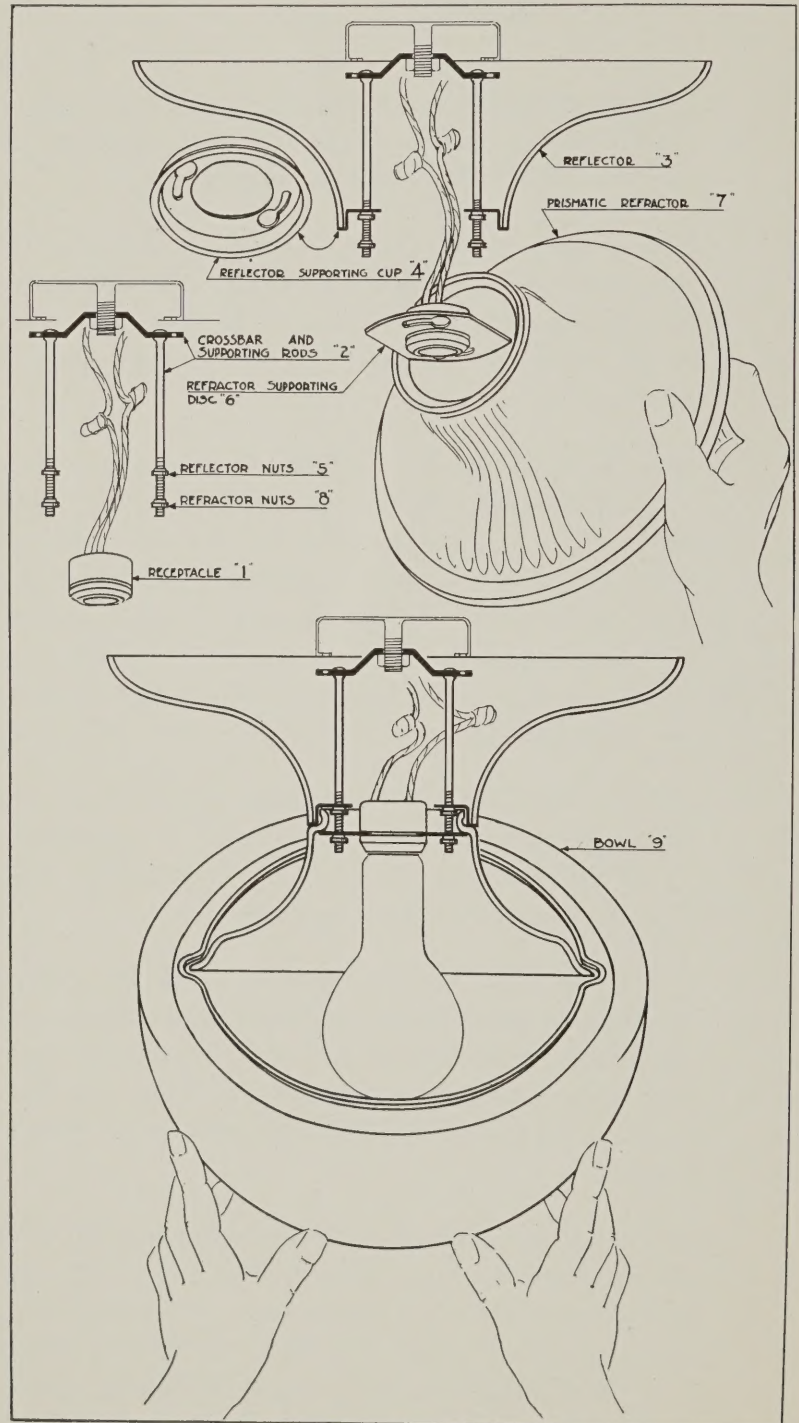
"C"—Place "reflector No. 3" over supporting rods and flush against ceiling and secure by inserting "reflector supporting cup No. 4" through opening in reflector and over "reflector supporting nuts No. 5," turning cup to right as far as possible and tightening nuts.

"D"—Pull "receptacle No. 1" through opening in "reflector supporting cup No. 4," unscrew porcelain ring, attach "refractor supporting disc No. 6" to receptacle and replace porcelain ring.

"E"—Draw "refractor supporting disc No. 6" with receptacle attached through neck of "prismatic refractor No. 7" and secure same by slipping supporting disc over "refractor nuts No. 8" and tightening.

"F"—After inserting Lamp, slide "bowl No. 9" through notches over flange of "refractor No. 7" and adjust bowl so that it will seat horizontally on refractor flange.

NOTE.—When equipped with Mogul Socket an extra crossbar attached to supporting rods will carry socket, and will be adjustable up or down. "Supporting disc No. 6" will then be used only as a means of securing "prismatic refractor No. 7" to "Crossbar and supporting rods No. 1."



Photometric Test

ELECTRICAL TESTING LABORATORIES

NEW YORK, N. Y.

REPORT No. 46509

ORDER No. 38737-S

PLATE No. 20632

CANDLEPOWER DISTRIBUTION

LUMINAIRE NO. 51

Rendered to Gill-Virden Company

No. Submitted - One

Lamp - 200-watt Mazda C, 3240 lumens,
Bulb PS-30 Clear, Filament Ring, 115
volts.
Holder

Procedure - Luminaire rotated

Dimensions of Luminaire

a _____
b 6 in.
c _____
d 4 3/8"
e 8 1/4", 8 1/4"
f 14 1/4", 14 1/4"
h _____

Weight of glass Top 35 oz.
Clear-51 oz.-Globe-32 oz.

LUMINAIRE DISTRIBUTION DATA

Mean Vertical

MID- ZONE ANGLE	APPARENT CANDLEPOWER AT 10 FEET	ZONAL LUMENS	MID- ZONE ANGLE	APPARENT CANDLEPOWER AT 10 FEET	ZONAL LUMENS
180° ZEN.	60		90° NOD.	158	
175°	62	6	85°	165	180
165°	61	17	75°	186	197
155°	91	42	65°	218	213
145°	128	91	55°	230	206
135°	370	272	45°	241	186
125°	530	450	35°	252	158
115°	280	289	25°	250	115
105°	162	178	15°	244	69
95°	157	171	5°	240	23
			0° NADIR.	240	

LIGHT FLUX VALUES

ZONE	LUMENS		PERCENT TOTAL LUMENS BARE LAMP	PERCENT LIGHT OUTPUT
	LAMP	LUMINAIRE		
0 - 50	820	757	23	89
0 - 90	1629	1347	42	
90 - 180	1608	1516	47	
0 - 180	3237	2863	89	

LUMINAIRE BRIGHTNESS

MILLILAMBERTS AND CANDLEPOWER PER SQUARE INCH

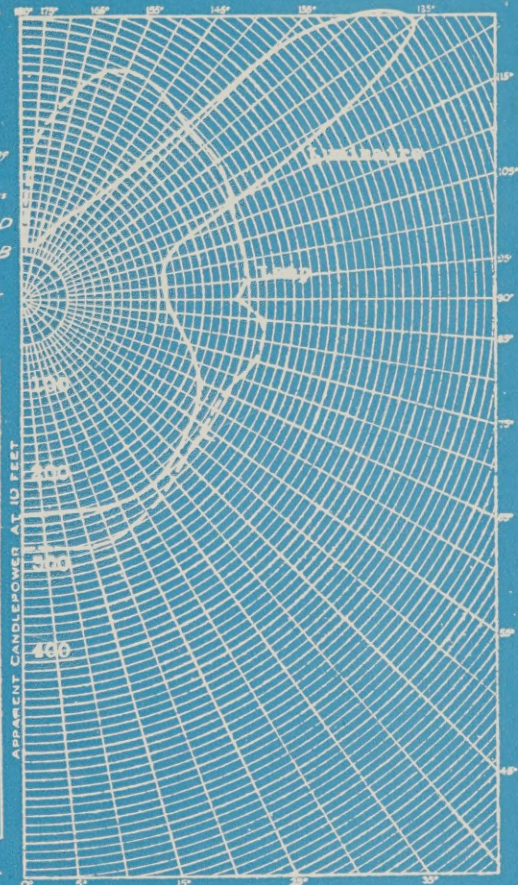
Locations	A	B	C	D	E	F	G	H	I	J	K
ML.	840	940	920	900	1000	720	1100	720	940	920	850
Cp. per Sq. In.	1.7	1.9	1.9	1.85	2.1	1.5	2.3	1.5	1.9	1.9	1.7

NOTE: THE ARROWS INDICATE THE LOCATION AND ANGLE OF VIEW *E.T.L. Identification Nos. 1818, 1827.

TESTED BY *[Signature]* PLOTTED BY *[Signature]* COMPUTED BY *[Signature]* CHECKED BY *[Signature]* ISSUED Apr. 30, 1928

APPROVED BY
[Signature]
ENGINEER IN CHARGE OF PHOTOMETRY

[Signature]
IN CHARGE OF TEST



The Candle power distribution of the Scientific Unit shown above indicates that our new unit has a light efficiency of 89%, that is, 89% of the light generated by the lamp is ultimately diffused by the Luminaire. However, efficiency in Luminaires has or ought to have, a much more comprehensive and exact meaning than is generally given it. Real efficiency is not restricted to the percentage of light output diffused by the Luminaire which, because it is often the most obvious and patent, is frequently regarded as the most important. If that were true, however, the most efficient Luminaire would be the bare lamp which has a total light output of 100%. True efficiency means, however, in addition to percentage of light output, absence of glare and possibly, most important of all, the projection of light on useful planes. It is possible, for example, to visualize a unit with a light output of 98%, which yet might be a highly inefficient Luminaire, first because it is haphazard in operation, and secondly because it is glaring in appearance. Percentage of light output, therefore, is merely the first step in considering the merits of any unit as a Luminaire. It is not the most important, and in fact in very many cases, is secondary to the most important question of all: What is really done with the light diffused by the unit? The Photometric test shown above shows a very high light output of 89%, for the Scientific Unit, but what it does not show is that practically all the light is controlled and is projected on useful planes, first by the Diffusing Bowl, and secondly by the White Glass Canopy. Nothing has been left to chance, and a successful effort has been made to flood the working plane with a soft full light, free from glare. Our aim has been to design a unit of high light output, and primarily equipped to utilize this light in the most effective manner.

'Scientific' Unit (Plain White Finish)



Numbers 75, 76 and 77

Equipped with Edison Base Porcelain Socket. If Mogul Socket is wanted please so specify and add 60c to list.

PLAIN UNIT—The "SCIENTIFIC" UNIT, as illustrated, consists of a diffusing bowl of HYPERION glass and crystal reflector, and a white glass canopy. While it is extremely graceful in appearance and particularly so when illuminated, it is designed primarily for efficiency, and for the projection of a maximum illumination on the working plane. This result is attained by direct diffusion through the bottom bowl, and indirectly through the crystal reflector and redirected by the glass canopy.

"DAYLITE GLASS"—There are certain specific conditions which require a quality of light approximating daylight. This is true, for example, where close matching of colors is desired or where, for any purpose, the daylight effect is of prime importance. The "SCIENTIFIC" UNIT can be furnished in this type of glass, and the resultant diffusion of light is as close an approximation of daylight as it is possible to obtain. Our "DAYLITE" glass is not a cased glass, but a one-piece glass, and is practically as efficient, so far as light output is concerned, as the plain Hyperion unit. The quality of light which it projects however, is as stated above, a very close approximation of daylight, and its light weight and high efficiency make it a singularly appropriate unit for the purpose for which it is designed.

If Day-Lite Glass is wanted order No. 78, 79 or 80.

Unit Number	Diameter of Canopy	Diameter of Bottom Bowl	Length Overall	Quantity to Carton Dozen	Weight of Carton Pounds	Price Each Complete
75	16"	12"	15"	1/12	15	\$12.75
76	16"	14"	16"	1/12	16	13.50
77	16"	16"	17"	1/12	19	16.50
78	16"	12"	15"	1/12	15	14.01
79	16"	14"	16"	1/12	16	14.85
80	16"	16"	17"	1/12	19	18.15

Furnished with Levolver Switch at advance of \$2.25 each list.

'Scientific' Unit (*Marble Finish*)



Numbers 84, 85 and 86

Equipped with Edison Base Porcelain Socket. If Mogul Socket is wanted please so specify and add 60c to list.

A very unusual and unique decorative effect is illustrated above, which is extremely attractive and peculiarly adapted for certain specific conditions. The decoration shown simulates the peculiar configuration of marble and, as a matter of fact, the unit seems in reality to be constructed from a luminous piece of marble. It is peculiarly adapted as a harmonizing factor in hotels, banks, hospitals and wherever marble trimming is used in construction.

Unit Number	Diameter of Canopy	Diameter of Bottom Bowl	Length Overall	Quantity to Carton Dozen	Weight of Carton Pounds	Price Each Complete
84	16"	12"	15"	1/12	15	\$15.75
85	16"	14"	16"	1/12	16	16.50
86	16"	16"	17"	1/12	19	20.25

Furnished with Levolver Switch at advance of \$2.25 each list.

'Scientific' Unit (*Etched Finish*)



Numbers 81, 82 and 83

Equipped with Edison Base Porcelain Socket. If wanted with Mogul Socket please so specify and add 60c to list.

Where decorative illumination is desirable, the "SCIENTIFIC" UNIT can be furnished with etched design, as shown above. An effort has been made to furnish the decorative treatment without impairing the efficiency of the unit itself. As a matter of fact, the unit, even in the plain combination, is extremely graceful in appearance, the contrast between the clear crystal of the reflector and the white glass of the canopy and bowl is very striking and pleasing. In the etched design, however, its normal attractive appearance is, of course, emphasized and enhanced.

Unit Number	Diameter of Canopy	Diameter of Bottom Bowl	Length Overall	Quantity to Carton Dozen	Weight of Carton Pounds	Price Each Complete
81	16"	12"	15"	1/12	15	\$15.75
82	16"	14"	16"	1/12	16	16.50
83	16"	16"	17"	1/12	19	20.25

Furnished with Levolver Switch at advance of \$2.25 each list.

"Scientific" Unit (*Ivory Finish*)



Numbers 87, 88 and 89

Equipped with Edison Base Porcelain Socket. If Mogul Socket is desired please so specify and add 60c to list.

This treatment of the "SCIENTIFIC" UNIT is recommended wherever it is desired that indirect illumination dominate. The bowl is decorated in a pleasing neutral color, restful to the eye and a large percentage of the light is projected by the crystal reflector on the white canopy and redirected to the working plane. The unit is not only efficient, but decorative and serves to illustrate the varied possibilities of the "SCIENTIFIC" UNIT.

Unit Number	Diameter of Canopy	Diameter of Bottom Bowl	Length Overall	Quantity to Carton Dozen	Weight of Carton Pounds	Price Each Complete
87	16"	12"	15"	1/12	15	\$13.95
88	16"	14"	16"	1/12	16	14.70
89	16"	16"	17"	1/12	19	18.00

Furnished with Levolver Switch at advance of \$2.25 each list.

'Scientific' Unit (*Pendant Type*)

STATUARY BRONZE PENDANT



Numbers 44/90, 44/91 and 44/92

Deep flanged canopy with knockout. Equipped with special approved receptacle and asbestos wire.
If Mogul Socket is desired please so specify and add 60c to list.

In designing the "SCIENTIFIC" UNIT, it was the thought of our engineers that the ceiling type, because of its unusual efficiency, would render the pendant type in large measure unnecessary, and in fact, where ceilings are not over 14 ft. in height the "SCIENTIFIC" UNIT in the ceiling type will be found eminently satisfactory and efficient. There are, however, undoubtedly unusual conditions which will require the pendant type, and the illustration shows how the "SCIENTIFIC" UNIT is furnished when this particular type is required. The bottom diffusing bowl and crystal reflector complete the pendant type, the combination comprising an unusually efficient unit.

If combination of glass and fixture is wanted give combination of number of fixture and glass.

Fixture Number	Glass Number	Diameter of Bowl	Length Overall	Size of Fitter	Unit Package When Complete Dozen	Unit Package Glass Only Dozen	Unit Package Fixture Only	Price Each Complete	Price Dozen Glass Only	Price Each Fixture Only
44	90	12"	43"	4"	1/12	1/12	24	\$12.75	\$117.00	\$2.70
44	91	14"	44"	4"	1/12	1/12	24	13.50	126.00	2.70
44	92	16"	45"	4"	1/12	1/12	24	16.50	162.00	2.70

Furnished with Levolver Switch at advance of \$1.50 each list.

